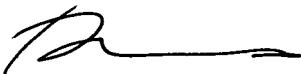


Remarks

This Amendment is being made in response to the Notice to Comply dated March 26, 2007.  
Applicants respectfully submit that no new matter has been introduced.

The Commissioner is hereby authorized to charge any fees which may be required to Deposit  
Account No. 19-0065.

Respectfully submitted,



Doran R. Pace  
Patent Attorney  
Registration No. 38,261  
Phone No.: 352-375-8100  
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Address: P.O. Box 142950  
Gainesville, FL 32614-2950

DRP/kmm

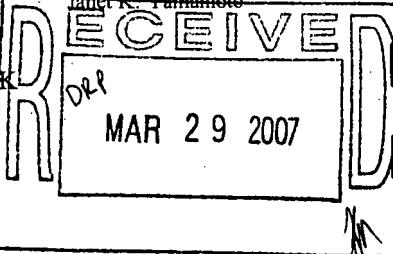
Attachment: copy of Notice to Comply dated March 26, 2007



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,772	02/22/2002		UF-267XC1	1105
23557	7590	03/26/2007		
SALIWANCHIK LLOYD & SALIWANCHIK A PROFESSIONAL ASSOCIATION PO BOX 142950 GAINESVILLE, FL 32614-2950			EXAMINER	
			PARKIN, JEFFREY S	
			ART UNIT	PAPER NUMBER
			1648	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	03/26/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Notice to Comply</b>	<b>Application No.</b> 10/080,772	<b>Applicant(s)</b> Yamamoto, J. K., et al.	
	<b>Examiner</b> Jeffrey S. Parkin	<b>Art Unit</b> 1648	<b>Paper No.</b> 03/19/2007

**NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING  
NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES**

Applicant must file the items indicated below within the time period set the Office action to which the Notice is attached to avoid abandonment under 35 U.S.C. § 133 (extensions of time may be obtained under the provisions of 37 CFR 1.136(a)).

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

- 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to the final rulemaking notice published at 55 FR 18230 (May 1, 1990), and 1114 OG 29 (May 15, 1990). If the effective filing date is on or after July 1, 1998, see the final rulemaking notice published at 63 FR 29620 (June 1, 1998) and 1211 OG 82 (June 23, 1998).
- 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).
- 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).
- 4. ~~A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."~~
- 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).
- 6. The paper copy of the "Sequence Listing" is not the same as the computer readable from of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
- 7. Other: applicants are reminded that Sequences appearing in the specification and/or drawings (e.g., see Figures 2, 4, and 10) must be identified by a sequence identifier (SEQ ID NO.:) in accordance with 37 C.F.R. § 1.821(d). Sequence identifiers for sequences appearing in the drawings may appear in the Brief Description of the Drawings. Applicant must provide appropriate amendments to the specification and/or drawings inserting the required sequence identifiers. Extensive amendments may necessitate the submission of a substitute specification. If the requisite SEQ ID NOS.: are not present in the sequence listing, a substitute sequence listing will be required.

**Applicant May Need to Provide:**

- An substitute computer readable form (CRF) copy of the "Sequence Listing".
- An substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.
- A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

- For Rules Interpretation, call (571) 272-0951
- For Patentin Software Program Help, call Patent EBC at 1-866-217-9197 between the hours of 6 a.m. and 12 midnight, Monday through Friday, EST.
- Send e-mail correspondence for Patentin Software Program Help @ [ebc@uspto.gov](mailto:ebc@uspto.gov).

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SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
10/080,772	02/22/2002	Yamamoto, J. K., et al.	UF-267XC1

EXAMINER	
Jeffrey S. Parkin, Ph.D.	
ART UNIT	PAPER NUMBER
1648	03/19/2007

DATE MAILED:

**Please find below a communication from the EXAMINER in charge of this application**  
Commissioner of Patents

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 C.F.R. § 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 C.F.R. § 1.821-1.825 for the reason(s) set forth below or on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. Any questions regarding compliance with the sequence rules requirements specifically should be directed to the departments listed at the bottom of the Notice to Comply. Applicants are reminded that sequences appearing in the specification and/or drawings (e.g., see Figures 2, 4, and 10) must be identified by a sequence identifier (SEQ ID NO.:) in accordance with 37 C.F.R. § 1.821(d). Sequence identifiers for sequences appearing in the drawings may appear in the Brief Description of the Drawings. Applicant must provide appropriate amendments to the specification and/or drawings inserting the required sequence identifiers. Extensive amendments may necessitate the submission of a substitute specification. If the requisite SEQ ID NOS.: are not present in the sequence listing, a substitute sequence listing will be required.

Applicant is given ONE MONTH, or THIRTY DAYS, whichever is longer, from the mailing date of this letter within which to comply with the sequence

Serial No.: 10/080,772  
Applicants: Haynes, B. F., et al.

rules, 37 C.F.R. § 1.821-1.825. Failure to comply with these requirements will result in **ABANDONMENT** of the application under 37 C.F.R. § 1.821(g). Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 C.F.R. § 1.136(a). In no case may an applicant extend the period for reply beyond the **SIX MONTH** statutory period. Direct the reply to the undersigned. Applicant is requested to return a copy of the attached Notice to Comply with the reply.

**Correspondence**

Any inquiry concerning this communication should be directed to Jeffrey S. Parkin, Ph.D., whose telephone number is (571) 272-0908. The examiner can normally be reached Monday through Thursday from 10:30 AM to 9:00 PM. A message may be left on the examiner's voice mail service. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Bruce R. Campell, Ph.D., can be reached at (571) 272-0974. Direct general status inquiries to the Technology Center 1600 receptionist at (571) 272-1600. Informal communications may be submitted to the Examiner's RightFAX account at (571) 273-0908.

Applicants are reminded that the United States Patent and Trademark Office (Office) requires most patent related correspondence to be: a) faxed to the Central FAX number (571-273-8300) (updated as of July 15, 2005), b) hand carried or delivered to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314), c) mailed to the mailing address set forth in 37 C.F.R. § 1.1 (e.g., P.O. Box 1450, Alexandria, VA 22313-1450), or d) transmitted to the Office using the Office's Electronic Filing System. This notice replaces all prior Office notices specifying a specific fax number or hand carry address for certain patent related correspondence. For further information refer to the Updated Notice of Centralized Delivery and Facsimile Transmission Policy for Patent Related Correspondence, and Exceptions Thereto, 1292 Off. Gaz. Pat. Office 186 (March 29, 2005).

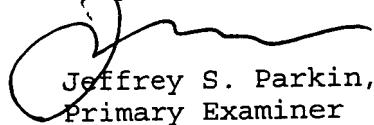
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Please direct all replies to the United States Patent and Trademark Office via one of the following: 1) Electronically submitted through EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>>), EFS Submission User Manual - ePAVE); 2) Mailed to: Mail Stop Sequence, Commissioner for Patents, P.O. Box 22313-1450, Alexandria, VA 22313-1450; and 3) Hand Carry, Federal Express, United Parcel Service or other delivery service to: U.S. Patent and

Serial No.: 10/080,772  
Applicants: Haynes, B. F., et al.

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Respectfully,



Jeffrey S. Parkin, Ph.D.  
Primary Examiner  
Art Unit 1648

19 March, 2007

PBL 81  
83  
810  
820  
822  
824  
841  
842  
843

ACCCGATGGCTTAAGCAATGCTTATGTTACTACAGGACAGAACTCTGGTATACTACAGAGAATTAGAACAGTTAAGATCGATTATTTGIGATT 200

PCI consensus 201:ACATGACAGAACAGACATATGGATCTAGTAAGAAATTGATATGCCATTACACTTTAAAAGTTTTCGCACTGGAATTAAATATGACTCTG  
PCI #4 :-----A-----  
#5 :-----  
#6 :-----A-----  
#10 :-----  
#12 :-----G-----  
#13 :-----  
#14 :-----  
#15 :-----  
#16 :-----

PIN# B1 :----G----  
B3 :----C----  
B10 :----C----  
B20 :----C----  
B22 :----G----  
B24 :----G----  
B41 :----C----  
B42 :----G----  
B43 :----G----

TCTACTGCGGCCGCTGAAACACATGTATGTCAGATGGGATTAGATACCAGACCACTATAAAGCAAGTGGGGGAAAGCAGAAGGGACCTCCACAGG 400

G G G G G G G G G G

FIG. 2A

PC1consensus 401.CTATCCATICAACAGTAAATGGAGCACCACTATGTAGCCCTTGACCCAATAATGGTGTCCATTATGAAAAAGCAGAGGGCTACAGAG

PC1	84	
	85	
	86	
	810	
	812	
	813	
	814	
	815	
	816	
PH1	81	-C-
	83	-C-
	810	-C-
	820	-C-
	822	-C-
	824	-C-
	841	-C-
	842	-C-
	843	-C-

TGAGGAGGTCCAACGTGGTTCAAGCCCTTCTCTGCTATTAACTTCACCTGATATGGCTACNTTAATTATGCTCGGCTGGCTGCAGATAAA 600

PC1consensus 601.GAGATCTTAGATGAAACACTGAAACAGATGACAGCTGACTATGATGATGATCTCTCTGATGGGCTAGACGGCTGCCATTTCACCCCTGGGAGA

PC1	84	-A-	-T-	-A-
	85	-A-	-T-	
	86	-A-	-T-	
	810			
	812			
	813			
	814		-A-	
	815			
	816			
PH1	81			-G--A-
	83			
	810			
	820			
	822			
	824			
	841			
	842			
	843			

TTATCGGAATAGGATTAATCTAGAACAAACAGGGAGCCCAGATTCCACCCAGCTAGAAATCCAGTGAGGCATGGTATCTGAAGGACTACGGAAAGTT 800

-G-			
			-G-

FIG. 2B

PC1.concensus 801:GGCAGCCATAAAAGCTAAATCTCCCCGAGCAGTGCATTGAAGCAAGGAGCTAAAGAGGATTATTCCTCATTTAGATAGATATTGGCTAAATAGAT

PC1 #4 :-----C-----  
 #5 :-----  
 #6 :-----T-----  
 #10 :-----A-----  
 #12 :-----  
 #13 :-----A-----  
 #14 :-----  
 #15 :-----  
 #16 :-----

PH1 #1 :-----  
 #3 :-----  
 #10 :-----  
 #20 :-----  
 #22 :-----  
 #24 :-----  
 #41 :-----  
 #42 :-----C-----  
 #43 :-----

CAAGAGCACACAGCTGAAGTAANGCTGTATTAAAACAATCTTGACCATAGCCATAGCTAACCCAGATTGTAAAAGGCCATGAGTCATCTTAAAC 1000

PC1.concensus 1001:AGAGAGTACTTTAGACGAAAAAAACTGAGACCTGTCAAGAGGTAGGATACCAGGATAAAAATGCAGTTGTTACAGAAGCTTACAGGTTTCAGAC

PC1 #4 :-----  
 #5 :-----  
 #6 :-----  
 #10 :-----  
 #12 :-----  
 #13 :-----  
 #14 :-----  
 #15 :-----  
 #16 :-----

PH1 #1 :-----  
 #3 :-----  
 #10 :-----  
 #20 :-----  
 #22 :-----  
 #24 :-----  
 #41 :-----  
 #42 :-----  
 #43 :-----

AGTTCAAACAGAGGATCTAGACCAACGTTCAATTGAAAAACAGGCCACCTGGCAAACAATGTAGAGAAGCAAGAGATGTAACACTGTGA 1200

-----T-----  
 -----T-----  
 -----T-----  
 -----  
 -----  
 -----  
 -----  
 -----  
 -----T-----

FIG. 2C

FC1coconsensus 1201, AACCTGGTACCTAGCTCTATTGCTGCCAAAGAGGTAAAAAAACCCCGGAACGGGAATGGGSCCAGCTGC  
FC1 84 :-----A-----C-----  
85 :-----A-----  
86 :-----A-----  
810 :-----  
812 :-----  
813 :-----  
814 :-----  
815 :-----A-----  
816 :-----  
  
FB1 81 :-----  
83 :-----  
810 :-----  
820 :-----  
822 :-----  
824 :-----  
841 :-----  
842 :-----  
843 :-----  
  
ACCCCCGGTAACCGAGTCAGCAATTGGTOCCATCTGCACCTCCAATGGAAGACAGGAATTGGAGATTATAA 1353  
-----G-----  
-----G-----  
-----G-----  
-----C-----

FIG. 2D

PC1conensus	1. MGRQGRDWEKAVIRCSNVAVGVGSKSRKPGEGNFRWIRMANVTTGREGPGDIPENLDEQLRSIICDLEHDRREQYQSSKEIDMAITTLKVPAVAGILNNTV
PC1	-A-----N-----
#4	-A-----L-----
#5	-A-----N-----
#6	-
#10	-I-----R-----R-----K-----N-----
#12	-
#13	-
#14	-
#15	-
#16	-V-----

PH1 #1 -----C-----  
#3 -----C----- V  
#10 -----G-----  
#20 -----G-----  
#22 -----G-----  
#24 -----G-----  
#41 -----D----- C  
#42 -----D----- C  
#43 -----G-----

STAAAAEHDHYAQNGLDTRPS I KESGGKEEGPPOA YP I QTVNCAPOYVALDPKMSV I PHEKAREGLOGB EVOQMLPTAPSANLTSTDIMATLIMSAPGCCAOK 200

PC1consensus	201.RILDSTLQKMTAEYDRTHPPDGPRLPYPTAAEIMIGLTLQQQAESPRPAPARMCRANYLEALGKLLAAIAKAKSPRAVQLQGAKEDYSSPIDIQLPAQID
PC1 #4	-----I-D-----R-----P-----
#5	-----I-D-----R-----P-----
#6	-----I-D-----R-----P-----
#10	-----
#12	-----
#13	-----
#14	-----
#15	-----
#16	-----N-----

PHL #1  
#3  
#10  
#20  
#22  
#24  
#41  
#42  
#43

QEQTAAEVKLYLJQSLSIAMAANPDCIKRMSHLIPESTLBRKLRAQCQEVGSPCTKMQLLAALTRVOTVQTRGSRPTCPNCUKKPGHLAKQCREAKRCRNGC

- 399

—S—  
—M—

FIG. 2E

PC1concensus 401: KPGHLAAANCNQRGKKTGIGRIGPAAAPVNVQQQMVPAPPMDRELLDL 450  
PC1 #4 -----R-----  
#5  
#6 400:----- 449  
#10  
#12  
#13  
#14  
#15  
#16  
  
PB1 #1 -----  
#3 -----  
#10 -----C-----  
#20 -----C-----  
#22  
#24  
#41 -----A-----  
#42 -----A-----  
#43 -----

FIG. 2F

PH1	1.	ATCGGAAATGGACAGGGGCCGAGACTGGCAGACGGCGCTTAAGAGATGTAGTAATGTGCTGTAGGGCTAGGGTAAAGCTAGAAGTAGAACTTTCCGAGANGAA
PCI		-----T-----A-T-----A-----A-----G-G-----A-A-----G-
PETALUMA		-----T-----A-T-----A-----C-----A-----G-G-----A-A-----G-
UXB		-----T-----A-T-----A-----A-----G-G-----A-A-----G-G
PPR		-----T-----A-T-----A-----A-----G-G-----A-A-----G-G
SEDAI-1		
BANGSTON		-----T-----T-----A-T-----A-----A-----G-G-G-----A-A-----A-
AOMORI-1		
AOMORI-2		
SEDAI-2		
TM2		-----A-T-----A-----A-----A-----A-----GA-C-----
YOKORAMA		
SHIZUOKA		-----T-----A-----A-A-----TACG-----ACMACGA-----AC-----C-----G-
FUJIWARA		

ACTTTGTGGCCATAAGGATGCCATAATGTAACCTACAGGACCGAGAACCTGGTGATATAACCAAGAGAATTAGAACAGTTAACATGATTATTUAGATIT 200  
-T-C-A-T-A-T-----C-----T-AC-G-T-G-C-  
-T-C-A-C-A-T-----C-----T-AC-G-T-G-C-  
-T-----A-T-----C-----T-A-G-T-G-C-  
-T-C-A-T-A-C-T-----C-----T-AC-G-T-G-C-A-  
-----A-----A-----C-----A-----  
-T-A-T-G-A-C-G-T-----T-----CC-----T-AC-G-GTAC-C-

PH1	201.	ACATGGCAGAAGAGAACATAATGGATCTAGTAAGAAATTGATATGGCAATTACCACTTAAANGTTTCCAGTAGCTGGATTTAAANTATGACTGTG
PC1	-----A-----	
PETALUMA	-A-A-----A-T-----C-----	-GTG-A-C-G-A-C-G-
UK8	-A-AA-----A-T-----C-----	C-TG-C-A
PPR	-A-AA-----A-T-----C-----C-----	A-TG-C-A
SENDAI-1		T-T-A-C-A-A
BANGSTON	-A-AA-----A-T-----C-----T-G-C-----	T-A-C-C-G-TA-C-A
AKOMORI-1		GTT-G-A-C-A
AKOMORI-2		-G-A-C-A
SENDAI-2		-G-A-C-A
TM2	-----A-----C-----G-----	-G-A-C-A
YOKOHAMA		-C-G-A-C-A
SHIBUOKA	-G-AA-----G-GA-----T-----C-----C-----	CCT-C-A-G-C-T-A
PUKURO		CT-C-A-C-A-C-TA-T-C-A

FIG. 4A

PH1	401-CITATCCATTCAACAGTAAATGGAGCACCAACAGCTATGTAGCCCTTGACCCCCAAATGGTGTCCATCTTATGAAAAAAGCAGAGAGGGCTAGUAGG	T-----		
PC1	-A-----	-T-----	-A-----	-A-----
PETALUMA	-A-----	-A-----	-T-----	-G-----
UK8	-A-----	-A-----	-T-----	-G-----
PPR	-A-----	-A-----	-A-----	-G-----
SENDAI-1	-A-----	-T-----	-A-----	-A-----
BANGSTON	-A-----	-A-----	-A-----	-T-----
AOMORI-1	-A-----	-A-----	-A-----	-G-----
AOMORI-2	-A-----	-A-----	-A-----	-G-----
SENDAI-2	-A-----	-A-----	-A-----	-G-----
TM2	-A-----	-A-----	-A-----	-G-----
YOKOHAMA	-A-----	-A-----	-A-----	-G-----
SHIZUOKA	-A-----	-C-----	-C-----	-G-----
FUKUOKA	-A-----	-C-----	-A-----	-G-----

PH1	601	CAGATCTTAGATGAAACACTGAAACAGATGACAGCTGAGTATGATCGTACTCATCCTCTGATGGGCTAGACCGCTCCCTATTTCACCGCTCGGGAGA
PC1		
PETALUMA	--A--A-G-----GCT-A-G-AC-----A-A-----C-A-----CT-C-----AT-A-----T-T-A-A-A-A	
UXB	--A--A-G-----GCT-A-G-A-A-----A-A-----A-C-----T-----AT-A-A-----T-T-C-A-A-A	
PPR	--A--A-G-----GCT-A-G-AT-----A-A-----G-AA-----C-----T-----AT-A-----T-T-A-A-A-A	
SENDAI-1	--A--A-G-----GCT-A-G-AT-----A-A-----A-C-----CT-----AT-A-----T-T-A-A-A-A	
BANGSTON	--A-A-G-B-----GCT-A-G-AT-----A-A-----A-C-----T-C-----AT-A-----T-T-A-A-A-A	
AOMORI-1	--A-TC-----C-----C-----C-----T-C-----AT-A-----T-C-A	
AOMORI-2	--A-C-----G-----C-----C-----C-----T-C-----AT-A-----T-C-A	
SENDAI-2	-GA-AC-----G-----C-----C-----T-C-----AT-A-----T-C-A	
TW2	--A-C-----C-----C-----C-----T-C-----AT-A-----T-C-A	
YOKOHAMA	--A-AC-----C-----C-----C-----T-C-----AT-A-----T-C-A	
SHIZUOKA	--A-----T-TA-----A-----A-C-C-----G-----C-----T-----A-----T-T-A-A-A-A	
FUKUOKA	--A-T-----G-T-TA-----G-----A-C-C-----G-----C-----T-----A-C-T-----T-A-A-A-A	

TTTGGGAAATGGATTAACTCAGANCACAGCCAGGGAGCCCAAGATTTCACCGCTAGAATGCGATGTAGAGCATGGTATCTTGAAGCACTAGGAAGTT 800  
 G-----G-----G-----C-G-T-A-  
 T-----A-AG-A-----G-----G-G-T-A-  
 T-----A-AG-A-----G-A-----G-T-A-  
 T-----A-AG-A-----G-----G-T-A-  
 C-----A-AG-A-----G-----G-G-T-AC-  
 G-----A-----G-----C-----C-T-  
 G-----C-----G-----C-----C-T-  
 G-----A-----G-----C-----C-T-  
 G-----A-----G-----C-----C-T-  
 G-----A-----G-----C-----C-T-  
 G-----A-----A-T-----A-----C-T-GACT-  
 G-----A-----A-T-----A-----C-T-GACT-

FIG. 4B

PH1            801. GGCAGCCATAAAGCTAANTCTCCCCGACCGACTCAATTGAAGCAAGGAGCTAAAGAGGNTTATTCCICATTATAGATAGATTATTCGCTAAATAGAT  
 PC1  
 PETALUMA  
 UKB  
 PPR  
 SENDAI-1  
 BANGSTON  
 AOMORI-1  
 AOMORI-2  
 SENDAI-2  
 TM2  
 YOKOHAMA  
 SHIZUOKA  
 FUKUOKA

CAAGAGCAGAACACAGCTGAAGTAAAGCTGTATTTAAAAACATCTTGGCATAGCCATGCTAACCCAGATTGTAAAGGCCAATGAGTCATCTTAAC 1000

-----A-A-T-----T-T-A-----G-A-----T-----TG-C-----A-----C-C-----G-  
 -----A-A-T-----T-A-A-C-----G-A-A-G-T-----TG-A-C-----A-----G-  
 -----A-A-T-----T-T-A-C-----G-A-A-T-----T-----TG-A-C-----A-----G-  
 -----A-A-T-----T-AT-A-----G-A-A-T-----T-----TG-A-----AA-----C-----G-  
 -----A-A-T-----T-T-A-----G-A-A-T-T-----TG-A-----A-----C-C-----G-  
 -----A-----A-T-----T-----T-----A-----A-----A-----A-----A-  
 -----A-----A-T-----T-----T-----A-----A-----A-----A-----A-  
 -----A-----A-T-----T-----T-----A-----A-----A-----A-----A-  
 -----A-T-----T-----G-----A-----T-----C-----C-----G-----C-T-G-  
 -----A-T-----T-----G-----A-----T-----C-----G-----A-----C-T-A-G-

PH1            1001. CAGAGACTACTTAGAGGAAAATCTGAGAGCCCTGTCAGAGGTAGGATCACCGGATAAAATCAGTTGTTACCAGCTTACAAGGGTCAGAC  
 PC1  
 PETALUMA  
 UKB  
 PPR  
 SENDAI-1  
 BANGSTON  
 AOMORI-1  
 AOMORI-2  
 SENDAI-2  
 TM2  
 YOKOHAMA  
 SHIZUOKA  
 FUKUOKA

AGTTCAACAGAGGATCTAGACCAACGTTGTTCAATTGAAAAACAGGCCACCTGCCAACATGTAGAGCAAAGAGATGTACAACGTGCGA 1200

-----G-----T-----A-----G-----GT-----T-----A-T-A-A-G-----TG-A-A-----T-A-  
 -----G-----T-----A-----AG-----GT-----T-----G-G-T-A-A-G-G-----T-TG-A-A-----T-A-  
 -----G-----T-----A-----AG-----GT-----T-----G-T-A-A-G-G-----T-TG-A-A-----T-A-  
 -----A-----T-----A-----AG-----GT-----T-----A-T-A-A-G-G-----T-TG-A-A-----T-A-

-----A-----C-A-G-T-GT-----T-G-----A-----G-----T-----  
 -----C-----A-----C-A-H-----GTA-----T-----T-A-T-G-----T-TG-A-----T-A-

FIG. 4C

PH1 1201:AAACCTGGTCACTTAGCTGCTAATTGCTGGCAAAGAGGTAAAAACCCCGGGAAACCGGAAGATGGGGCCACCTGCAGCCCCGGTAAACCCAAGTCCAGC  
 FC1 -----TG-----C-----T-----G-AA-G-G-ATT-----T-----GC-----G-----A-G-T-A-----  
 PETALUMA -----G-----T-----C-GA-----GG-T-----G-A-T-----T-----GC-----G-----A-----  
 UK8 -----T-----C-A-T-----G-T-----G-ATT-----T-----GC-----G-----A-G-T-----  
 PPR -----G-----T-----C-A-T-----G-T-----G-ATT-----GC-----G-----A-G-T-----  
 SENDAI-1 -----G-----T-----C-A-T-----G-T-----G-ATT-----GC-----G-----A-G-T-----  
 BANGSTON -----G-----GG-----T-----A-----G-----G-----A-----  
 AGOMORI-1 -----G-----C-T-G-----C-A-T-----G-A-C-G-----TG-TT-----G-----A-----  
 AGOMORI-2 -----G-----C-T-G-----C-A-T-----G-A-C-G-----TG-TT-----G-----A-----  
 SENDAI-2 -----G-----GG-----T-----A-----G-----G-----A-----  
 TM2 -----G-----C-T-G-----C-A-T-----G-A-C-G-----TG-TT-----G-----A-----  
 YOKOHAMA -----G-----C-T-G-----C-A-T-----G-A-C-G-----TG-TT-----G-----A-----  
 SHIZUOKA -----G-----C-T-G-----C-A-T-----G-A-C-G-----TG-TT-----G-----A-----  
 FUKUOKA -----G-----C-T-G-----C-A-T-----G-A-C-G-----TG-TT-----G-----A-----  
  
 AAATGGT\*\*\*GCCATCTGCACCTCCAATGGAAGACAGGAATTGTTAGATTTATAA 1353  
 \*\*\*  
 --GCA-AAT-----G-G-AACT---GATTTA-A-  
 -GCCA-AAT-----G-G-ACT---GATTTA-A-  
 --CA-AAT-----G-A-ATT---GATTTA-A-A  
 --GCA-AATA-----T---A-G-G-AACT---GATTTA-A-  
 -----A---A-----G-G-AACT---AGATTTA-A-  
 --GCA---T-----G-----G-A-TTG---AGATTTA-A-

FIG. 4D

10080772 .070202

Consensus	-E-C-GC-GCTGAA-A-ATGTA,-CTCA-ATGGATTAGA-AC-AG-CATCT--A--GA---GG-GAAA-G--G	385
Pet gag	TGCTGCAGCTGAAATAATGTATTCTCAAATGGATTAGACACTAGGCCATCTATGAGGAGCAGGTGGAAAGAGG	385
Bang	TGCTGCAGCTGAAACATGTATACTCAGATGGATTAGACACCAGCCATCTAACAGAGAAGCAGGAGGAAAAAGGG	385
JSY3 gag O	TGCTGCAGCTGAAATAATGTACTACACTCGATGGATTAGACACTAGACATCTATGAGAAGCAGGAGGAAAGAGG	385
UK8 gag	TGCTGCAGCTGAAATAATGTACTCGATGGATTAGACACTAGACATCTAACAGAGAAGCAGGAGGAAAGAGG	385
Shizuoaka	TACTGCCGCTGAAATAATGTATGTTAAGGAGCAGGAGGAAAGTAGAGACATCTAACAGACATCTAACAGAGAAG	133
Aomori 1	CACAGCGAGCTGAAAATATGGATTAGACACCAGACATCTAACAGAGAAGTGGGGAAAAGAGAAG	133
TM2 gag	CACAGCGAGCTGAAAATATGTATGCTCAAGTGGATTAGACACCAGACATCTGTAAAAGAAAGTGGGGAAAAGAG	385
RT Forward	-----	0
RT Probe	-----	0
RT Reverse	-----	0
FC1 GAG	CGCAGCAGCTGAAACACATGGTATGCTCAAGTGGATTAGATACCAGACATCTAACAGAGAAGTGGGGAAAAGAG	385
A9=4	-----	0
B4=5	-----	0
Consensus	A--G--CCTCCACAGGC-T-TCCTAT-CAACAA--AATGGAG-ACCA-A--A-GTAGC-CT-GA-CC-ARRATGGT	462
Pet gag	AAGGC-CCTCCACAGGCATATCCTATCAAACAGTAAATGGAGTACCAAAATATGACCACTTGACCCAAAAATGGT	461
Bang	AAAGC-CCTCCACAGGCATATCCTATCAAACAGTAAATGGAGCACCACAAATATGACCACTTGACCCAAAAATGGT	461
JSY3 gag O	AAAGC-CCTCCACAGGCATATCCTATCAAACAGTAAATGGAGCACCACAAATATGACCACTTGACCCAAAAATGGT	461
UK8 gag	AAGGC-CCTCCACAGGCATATCCTATCAAACAGTAAATGGAGCACCACAAATATGACCTTTGACCCAAAAATGGT	461
Shizuoaka	A-GGAGCCCTCCACAGGCATATCCTATCAAACAGTAAATGGAGCACCACAAATATGACCTTTGACCCAAAAATGGT	209
Aomori 1	AAGGA-CCTCCACAGGCATATCCTATCAAACAGTAAATGGAGCACCACAGTATGACCCCTTGATCCAAAAATGGT	209
TM2 gag	AAGGA-CCTCCACAGGCATATCCTATCAAACAGTAAATGGAGCACCACAGTATGACCCCTTGATCCAAAAATGGT	461
RT Forward	--AGC-CCTCCACAGGCATCTC-----	19
RT Probe	-----ATTCACACAGCAAATGGAGCACCACAAATATG-----	31
RT Reverse	-----TTGACCCAAAAATGGT-----	16
FC1 GAG	AAAGGAA-CCTCCACAGGCATATCCTATCAAACAGTAAATGGAGCACCACAGTATGACCCCTTGACCCAAAAATGGT	461
A9=4	-TAGC-CCTCCACAGGCATATCCTATCAAACAGTAAATGGAGTACATAACAGTACCTTGACCCAAAAATGGT	75
B4=5	--AGG-CCTCCACAGGCATATCCTATCAAACAGTAAATGGAGTACACAATATGCGCTTGACCCAAAAATGGT	74

FIG. 10A

Consensus GTC-A-TTT-ATGGA-AA-GAAAGAGA-GG--TAGGAGG-GA-GA-GT-CA--T-TGGTT-AC-GC-TT-TC-GC-A 539  
 Pet gag GTCCATTTTATGAAAAGCAAGAGAAAGGACTAAGGAGGTGAGGAAGTCAACTATGGTTTACTGCCTTCTCTGCAA 538  
 Bang JSY3 gag O GTCCATTTTATGAAAAGCAAGAGAAAGGACTAAGGAGGTGAGGAAGTCAATTATGGTTTACTGCCTTCTCTGCAA 538  
 UK8 gag Shizuoaka GTCCATTTTATGAAAAGCAAGAGAAAGGACTAAGGAGGTGAGGAAGTCAACTATGGTTTACTGCCTTCTCTGCAA 538  
 Aomori 1 TM2 gag RT Forward RT Probe RT Reverse FC1 GAG B4=5 GTCCCAA  
 RT Reverse FC1 GAG GTCCCA  
 RT Reverse FC1 GAG GTCCCAA  
 Consensus AT-TAAC--C-ACTGA-ATGGC-ACATTAAT-ATG-C-GC-CC-GG-TG-GC-GCAG-TAA-GA-AT-T-GA-GAA 616  
 Pet gag ATTAAACACCTACTGACATGCCACATTAATAATGGCGCACATTAATAATGGCCACATGACATGGCTGCAGATAAAGAAATTGGATGAA 615  
 Bang JSY3 gag O ATTAAACACCTACTGACATGCCACATTAATAATGGCGCACATTAATAATGGCTGCAGATAAAGAAATTGGATGAA 615  
 UK8 gag Shizuoaka ATCTAACATCAACCTGATATGGCTACATTAATAATGTCGACCAGGTGTGCAGCAGATAAAGGAGATCTTAGATGAA 363  
 Aomori 1 TM2 gag RT Forward RT Probe RT Reverse FC1 GAG ATTTAACATCAACCTGATATGGCTACATTAATAATGTCGACCCTGGCTGTGCAGCAGATAAAGAAATTCTAGATGAA 615  
 RT Reverse FC1 GAG ATTTAACATCAACCTGATATGGCTACATTAATAATGTCGACCCTGGCTGTGCAGCAGATAAAGAAATTCTAGATGAA 19  
 RT Forward RT Probe RT Reverse FC1 GAG ATTTAACATCAACCTGATATGGCTACATTAATAATGTCGACCCTGGCTGTGCAGCAGATAAAGAAATTCTAGATGAA 76  
 RT Reverse FC1 GAG ATTTAACATCAACCTGATATGGCTACATTAATAATGTCGACCCTGGCTGTGCAGCAGATAAAGAAATTCTAGATGAA 80

FIG. 10B